

The Application of Daily Diary Methods to Occupational Stress Research

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Judith Godin, M.A. and Janet Mantler, Ph.D., Department of Psychology, Carleton University. The Balanced Physical Health Scale: A Diary Study Validation

Three studies (Schonfeld; Liu et al.; Huth et al.) employed diary methods to examine the relation of workplace stressors to psychological symptoms and morale; one study (Godin & Mantler) was concerned with the validation of a health measure to be used in diary studies of stress. In an online-diary study of 252 public school teachers over 14 consecutive days, Schonfeld found in same-day and lagged analyses that mood, enervation, and job satisfaction varied with daily job stressors controlling for NA and PA. Weekends had an ameliorative effect. The author discusses ramifications of same-day and lagged analyses.

In a telephone- interview study involving 37 Chinese workers and conducted over five consecutive weeks, Liu et al. found that daily work stress and daily work-to-family conflict were significantly related to alcohol consumption and desire to drink. The authors also found that controlling for work-to-family conflict, family-to-work conflict was not significantly related to daily alcohol use or desire to drink. In an electronic-diary study of 57 teachers and school staff conducted over ten working days three times daily, Huth et al. found that job demands were directly related to cognitive, physical, and emotional fatigue as well as work-family conflict (WFC).

Godin and Mantler found that hassles, which were assessed every three days for a month with an online diary, adversely affected posttest health as measured by the Balanced Physical Health Scale (BPHS) in 40 undergraduates. Because many stressors students experience resemble workplace stressors (e.g., projects, deadlines), the BPHS should be considered for use in research on the short-term effects of workplace stressors in healthy working adults.

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Diary Study of New Teachers

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Several longitudinal studies of teachers have linked adverse working conditions to unfavorable outcomes such as intention to quit, depression, reduced job satisfaction, etc. With few exceptions, these studies employed time frames that have involved months and years. None of the studies examined the day-to-day transactions in which teachers are involved that are thought give rise, cumulatively, to unfavorable outcomes.

Daily process methods (Affleck et al., 1999; Marco et al. 1999) provide a means for examining an individual's day-to-day transactions at work. The purpose of this study is to extend daily process methods to an examination of the work lives of teachers in their first few years on the job. With the help of a preliminary critical incident interview study, the author developed an online Teacher Daily Diary (TDD) to better understand the daily transactions of 252 novice New York City public school teachers (mean years taught = 2.6).

The TDD covered demanding events, and was organized thematically (e.g., difficult adults, problematic classroom management events short of violence, violent events). The TDD was completed every day for up to two weeks including weekends and holidays. For the majority of teachers the most commonly occurring demanding events were in the area of classroom management, particularly student disruption and inattention. More than 25% of teachers reported at least one case of a student physically hurting another student.

Hierarchical linear modeling (HLM) analyses demonstrated a powerful ameliorating effect of the weekend on the three dependent variables (DVs), negative mood, enervation, and job satisfaction, controlling for negative affectivity (NA) and positive affectivity (PA). HLM analyses revealed same-day effects for problematic adults and number of classroom management problems on the three DVs, controlling for NA and PA (and time of day for enervation). Exposure to violence adversely affected negative mood and job satisfaction but not enervation. In a set of lagged analyses that controlled for NA and PA, classroom management problems and exposure to violence predicted worse mood and poorer job satisfaction when the next day was a weekday but not when the next day was a Saturday or a school holiday. In contrast to the same-day analyses, the lagged analyses suggested that exposure to violence one day was related to enervation the next. The author discusses the differences between lagged effects and same-day effects.

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Work Family Conflict, Work Stress and Alcohol Use: A Daily Study

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Employee alcohol use has been shown to be both prevalent (Frone, 2006) and harmful (e.g., Cherpitel, 2007); thus it is critical to study work-related antecedents of alcohol use and apply the findings to informing intervention efforts. In the current study, we examined the intraindividual effects of daily work-family conflict and daily work stress on daily alcohol use and desire to drink. Specifically, drawing on tension reduction theory (Conger, 1956), daily work-family conflict and daily work stress were hypothesized to be positively related to daily desire to drink and daily alcohol use. In addition, based on stressor-vulnerability model, the intraindividual effects of daily work-family conflict and work stress on alcohol use variables were hypothesized to be moderated by individual difference variables, such as Neuroticism and job involvement.

A sample of full-time employees ($N = 37$) was recruited from four Chinese companies. Participants first completed instruments assessing demographic variables, neuroticism, and job involvement. Two weeks later, they started reporting on daily work family conflict, daily work stress, daily desire to drink, and daily alcohol use for five consecutive weeks. This daily information was collected via daily telephone interviews.

Multilevel analyses on both dependent variables showed that there were significant within-person variances in both daily desire to drink and daily alcohol use. Daily work stress and daily work-to-family conflict were significantly related to daily alcohol consumption and daily desire to drink. The variances of the random slope for work stress – alcohol use relationship and the random slope for work-to-family conflict – alcohol use relationship were both significant. Further, Neuroticism and job involvement were significantly related to the random slopes for work stress – alcohol use/desire to drink relationships. Contrary to our expectations, when controlling for work-to-family conflict, family-to-work conflict was not significantly related to daily alcohol use or desire to drink.

Based on current findings, a theoretical and empirical link between daily work-related stress and alcohol use was established. The current findings further suggest that daily diary methodology is appropriate to capture within-person fluctuation in health behaviors, such as alcohol use. In addition, the current findings highlight the importance of recognizing that between-person variables may influence within-person associations between stress and outcomes. Future research may use objective indicators of stress and drinking to further examine this link. Other possible moderators of this link may be further examined as well.

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School Staff Job Demands, Fatigue and Work-Family Conflict: An Experience Sampling Study

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Work-family conflict (WFC) is often conceptualized as a relatively stable within-person characteristic such that a single assessment of conflict is sufficient for many studies. However, single assessments of WFC miss important within-individual, day-to-day variation and the factors that can contribute to, or mitigate, this conflict. In order to better understand some of the antecedents to WFC, we focused on job and person characteristics that were likely to vary from day to day. Specifically, this study seeks to further understand how job demands and physical, cognitive, and emotional fatigue are related to WFC in a within-person context.

The sample consisted of 57 teachers and staff members at elementary and middle schools. The occupations were chosen for their relatively high demands. Using an experience sampling methodology, each participant responded to surveys at three points throughout the day for ten working days. To assess bias, we asked each participant's spouse (where available) to assess his or her partner's daily work-family conflict. Baseline measures of trait variables were also collected via electronic survey at the beginning of the study. Results showed significant main effects for job demands on cognitive, physical and emotional fatigue; individuals experiencing more demands on a given day also experienced more fatigue. Main effects were also found for job demands on WFC for both self and spouse report with higher demands related to higher conflict levels on that day. When emotional exhaustion was introduced as a mediating variable, the relation of job demands to WFC was reduced to nonsignificance. Physical fatigue also partially mediated the relation of job demands to WFC.

By furthering our understanding of how WFC and fatigue vary within an individual, we can develop both personal and job-design interventions to help reduce this conflict. Our results suggest that practical interventions for reducing WFC should focus on exhaustion and fatigue and how individuals recognize those feelings and renew themselves rather than on altering job demands, which may be less amenable change.

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The Balanced Physical Health Scale: A Diary Study Validation

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Most physical health measures focus on illness rather than positive health, which can lead to ceiling effects with relatively healthy working populations. The Balanced Physical Health Scale is a new 24-item scale designed to be a sensitive measure of physical health suitable for use with healthy, working populations. In the initial validation study, the Balanced Physical Health Scale was correlated moderately with mental health and perceived stress and discriminated on the basis of chronic and acute medical conditions in a sample of workers and job-seekers.

The purpose of the present study was to assess whether the Balanced Physical Health Scale could capture changes in health due to stress-related daily events and health-related behaviors over one month. A diary method was used to obtain accurate reports of daily events and health-related behaviors that were not retrospectively averaged over time. Forty participants were recruited from first-year psychology courses and tested during a period of high stress when daily events and health-related behaviors would be likely to fluctuate, increasing the potential for health changes. Participants completed a baseline and follow-up (1 month later) survey assessing health and demographic information. During the intervening month, participants completed an online diary entry once every three days, which assessed health-related behaviors, daily hassles, and daily uplifts.

Daily hassles experienced during the diary period significantly predicted worse physical health at Time 2, controlling for Time 1 physical health. By contrast, daily uplifts were not associated with Time 2 physical health. In addition, participants who regularly had seven or more hours of sleep had better physical health at Time 2 compared to participants who did not. Exercising at least 30 minutes on a regular basis was not associated with Time 2 physical health.

The Balanced Physical Health Scale appears to be sensitive enough to capture changes in health that result from stressful daily events and reduced sleep. Given that many of the stressors students experience are similar to workplace stressors (e.g., projects, deadlines, evaluation), these findings should be similar when the scale is used with working adults. Overall, this diary study demonstrates the suitability of the Balanced Physical Health Scale to capture changes in physical health over a relatively short period for relatively healthy individuals experiencing stressful daily events. As such, occupational health psychologists have a new measure of physical health that includes positive and negative elements and that is sensitive to stress-related changes in health over the short-term.

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